

What is claimed is:

1. A radio for a communication system, the radio transmitting a carrier signal having plural time slots designated as active and inactive time slots by a system controller, the radio comprising:
 4. a modulator that modulates the carrier signal with transmit data during active time slots when the transmit data is supplied from the system controller and discontinues modulation of the carrier signal during inactive time slots when random bits are supplied from the system controller; and
 9. a transmitter that wirelessly transmits the carrier signal provided by said modulator.
1. 2. The radio of claim 1, wherein said modulator discontinues modulation of the carrier signal gradually over at least a two-symbol time period.
1. 3. The radio of claim 1, wherein said modulator modulates the carrier signal with transmit data, sync data and CDL information supplied from the system controller during active time slots and modulates the carrier signal only with sync data and CDL information during inactive time slots.
1. 4. The radio of claim 1, wherein said transmitter wirelessly transmits the carrier signal to a mobile station in a TDMA communication system.
1. 5. A method of reducing adjacent and co-channel interference generated by a radio, the radio transmitting a carrier signal having

3 plural time slots designated as active time slots and inactive time
4 slots by a system controller, the method comprising:

5 modulating the carrier signal with transmit data during active
6 time slots when the transmit data is supplied by the system
7 controller;

8 discontinuing modulation of the carrier signal during inactive
9 time slots when random bits are supplied by the system controller;
10 and

11 wirelessly transmitting the carrier signal.

1 6. The method of reducing adjacent and co-channel interference
2 of claim 5, wherein said step of discontinuing modulation comprises
3 discontinuing modulation of the carrier signal gradually over at
4 least a two-symbol time period.

1 7. The method of reducing adjacent and co-channel interference
2 of claim 5, wherein said step of modulating comprises modulating
3 the carrier signal with transmit data, sync data and CDL
4 information supplied by the system controller and said step of
5 discontinuing modulation comprises modulating the carrier signal
6 only with sync data and CDL information.

1 8. The method of reducing adjacent and co-channel interference
2 of claim 5, wherein the carrier signal is wirelessly transmitted by
3 the radio to a mobile station in a TDMA communication system.

1 ~~9.~~ A system controller comprising:

2 means for providing transmit data for time slots of carrier
3 signals to be wirelessly transmitted from base stations; and

4 control means for designating which of the time slots are
5 active time slots wherein carrier signals are modulated with
6 transmit data and which are inactive time slots wherein modulation
7 of carrier signals with transmit data is discontinued,

8 said control means optimally organizing the time slots
9 so that each carrier signal has a minimum number of active time
10 slots.

1 10. The system controller of claim 9, wherein said control means
2 optimally organizes the time slots so that an nth time slot of a
3 carrier signal is an active time slot and nth time slots of adjacent
4 carrier signals are inactive time slots.

1 11. The system controller of claim 9, wherein the carrier signals
2 are TDMA carrier signals.

1 ~~12.~~ A method of reducing adjacent and co-channel interference in
2 carrier signals comprising the steps of:

3 providing transmit data for time slots of carrier signals to be
4 wirelessly transmitted from base stations;

5 designating which of the time slots are active time slots
6 wherein carrier signals are modulated with transmit data and which
7 are inactive time slots wherein modulation of carrier signals with
8 transmit data is discontinued; and

9 optimally organizing the time slots so that each carrier signal
10 has a minimum number of active time slots.

1 13. The method of reducing adjacent and co-channel interference
2 of claim 12, wherein said step of optimally organizing comprises
3 organizing the time slots so that an nth time slot of a carrier signal
4 is an active time slot and nth time slots of adjacent carrier signals
5 are inactive time slots.

1 14. The method of reducing adjacent and co-channel interference
2 of claim 12, wherein the carrier signals are TDMA carrier signals.

1 15. An article of manufacture taking the form of a computer-
2 readable medium for reducing adjacent and co-channel interference
3 generated by a radio, the radio transmitting a carrier signal having
4 plural time slots designated as active time slots and inactive time
5 slots by a system controller, the article of manufacture comprising:

6 a modulation source code segment for causing a computer to
7 modulate the carrier signal with transmit data when transmit data
8 is supplied by the system controller during active time slots;

9 a discontinuation source code segment for causing the
10 computer to discontinue modulation of the carrier signal when
11 random bits are supplied from the system controller during inactive
12 time slots; and

13 a transmission source code segment for causing the computer
14 to wirelessly transmit the carrier signals.

1 16. The article of manufacture of claim 15, wherein the carrier
2 signals are TDMA carrier signals.

1 17. An article of manufacture taking the form of a computer-
2 readable medium for reducing adjacent and co-channel interference
3 in carrier signals having plural time slots designated as active time
4 slots and inactive time slots by a system controller, the article of
5 manufacture comprising:

6 a transmit data source code segment for causing a computer
7 to provide transmit data for time slots of carrier signals to be
8 transmitted by base stations;

9 a designation source code segment for causing the computer
10 to designate which of the time slots are active time slots wherein
11 carrier signals are modulated with transmit data and which are
12 inactive time slots wherein modulation of carrier signals with
13 transmit data is discontinued; and

14 a first organization source code segment for causing the
15 computer to optimally organize the time slots so that each carrier
16 signal has a minimum number of active time slots.

1 18. The article of manufacture of claim 17, further comprising a
2 second organization source code segment for causing the computer
3 to organize time slots so that an nth time slot of a carrier signal is
4 an active time slot and nth time slots of adjacent carrier signals are
5 inactive time slots.

1 19. The article of manufacture of claim 17, wherein the carrier
2 signals are TDMA carrier signals.

1 ~~20.~~ A propagated signal embodied in a carrier signal comprising:
2 a CDL data segment for identifying the carrier signal;
3 a sync word segment for identifying a time slot of the carrier
4 signal; and

5 a control and data segment modulated with transmit data
6 when in an active time slot of the carrier signal and not modulated
7 with transmit data when in an inactive time slot of the carrier
8 signal,

9 wherein multiple mobile stations lock on to the propagated
10 signal and wherein interference created by the propagated signal in
11 other propagated signals received by the mobile stations is reduced
12 when the control and data segment of an inactive time slot is not
13 modulated with transmit data.